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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,238	12/07/2001	Miriam G. Blatt	03226.073001;P5521	5843
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OSHA LIANG L.L.P./SUN 1221 MCKINNEY, SUITE 2800 HOUSTON, TX 77010			EXAMINER STEVENS, THOMAS H	
			ART UNIT 2121	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/010,238	Applicant(s) BLATT ET AL.	
	Examiner Thomas H. Stevens	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-8 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, and 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Section I: Final Rejection

1. Claims 1-3,5-8, and 10-16 were examined.

New Matter 35 U.S.C. 132(a)

2. The amendment filed 03/20/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The original disclosure was silent to the meaning of the acronym SCD. This term was not directly or inherently disclosed originally. Applicants are required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3,5-8 and 10,11,14,15,16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims

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contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The disclosure is, verbatim, silent to the limitation of "wherein a derivative value is a different between two particular associated power values in the simulation".

5. Claims 14-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The acronym "SCD" is undefined within the original disclosure.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3,5-8 and 10,11,14,15,16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsiao et al., titled, "Effects of Delay Models on Peak Power Estimation of VLSI Sequential Circuits", IEEE 1997 (hereafter Hsiao). Hsiao teaches estimating the peak power of circuits (abstract).

Claim 1. A method for analyzing a power modeling simulation (Hsiao: abstract, "peak power...circuit during simulation"), comprising: receiving simulated power value data (Hsiao: pg.48, table 3, power estimates) from a power modeling simulator (Hsiao: abstract, "peak power...circuit during simulation"), wherein the power value data (Hsiao: pg.48, table 3, power estimates) comprises at least one type of power value selected from MAX, TYP, MIN., and TypMAX (Hsiao: pg.46, section 4 "GA Framework for Power Estimation", line 6); generating a set of summary data from the power value data (Hsiao: pg.48, table 3, power estimates); and reporting the summary data, (Hsiao: pg.48, table 3, power estimates) wherein the summary data includes at least one type of data selected from single-cycle summary (Hsiao: pg.51, table 7, "single cycle") data configured to report a peak single cycle derivative (although this limitation is not defined in the disclosure, the Office interprets "single cycle derivative" as "find power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) power value, wherein a derivative value(although this limitation is not defined in the disclosure, the Office interprets "single cycle derivative" as "find power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) is a difference between two particular associated power values in the simulation, multi-cycle (pg.49, table 4, "N- cycle") summary data configured to report a peak average power value over multiple cycles, (pg.49, table 4, "N- cycle") and multi-cycle derivative data configured to report a peak derivative power (find power under *different or derived* delay assumptions" , pg. 46, right column, 2nd paragraph, last two sentences) value over multiple cycles (pg.49, table 4, "N- cycle").

Claim 2. The method of claim 1, wherein generating summary data includes generating multi-cycle summary data (pg.49, table 4, "N- cycle"), comprising: calculating a value of a single-cycle derivative, (this limitation is not defined in the disclosure, the Office interprets "single cycle derivative" as "find power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) wherein the single-cycle derivative is a derivative ("finding power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) of two particular power data in a set of successive cycles.

Claim 3. The method of claim 2, wherein the single-cycle derivative is a peak single-cycle derivative (although this limitation is not defined in the disclosure, the Office interprets "single cycle derivative" as "find power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences).

Claim 5. A method of analyzing power modeling simulation (Hsiao: abstract, "peak power...circuit during simulation") for designing a chip, comprising: obtaining a plurality of power value data (Hsiao: pg.48, table 3, power estimates) from a power modeling simulator, wherein the plurality of power values comprises at least one type of power value selected from MAY, TYP, MIN, and TypMAX (Hsiao: pg.46, section 4 "GA Framework for Power Estimation", line 6); generating a set of summary data (pg.49, table 4); and reporting the summary data as parameters for chip design, wherein the

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summary data includes at least one type of data selected from single-cycle (pg.49, table 4, "N- cycle") summary data configured to report a peak single cycle derivative power value, wherein a derivative value is a difference (although this limitation is not defined in the disclosure, the Office interprets "single cycle derivative" as "find power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) between two particular associated power values in the simulation, multi-cycle summary data (find power under *different or derived* delay assumptions" , pg. 46, right column, 2nd paragraph, last two sentences) configured to report a peak average power value over multiple cycles, (pg.49, table 4, "N- cycle") and multi-cycle derivative data configured to report a peak derivative ("finding power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) power value over multiple cycles (pg.49, table 4, "N- cycle").

Claim 6. The method of claim 5, wherein generating summary data comprises: calculating a multiple-cycle power average (pg. 45, right column, 2nd paragraph, lines 1-3 and pg. pg. 49, table 4, "N-cycles"), wherein the multi-cycle power average (pg. 45, right column, 2nd paragraph, lines 1-3 and pg. pg. 49, table 4, "N-cycles") is an average of the power value data (Hsiao: pg.48, table 3, power estimates) over a plurality of cycles.

Claim 7. The method of claim 6, wherein a length of the plurality of cycles (pg.49, table 4, "N- cycle") is fixed.

Claim 8. The method of claim 6, wherein generating summary data further comprises: calculating a peak value of the multi-cycle power average (pg.49, table 4, "N- cycle").

Claim 10. A method of data analysis for a power modeling simulation (Hsiao: abstract, "peak power...circuit during simulation"), comprising: obtaining a plurality of power value data (Hsiao: pg.48, table 3, power estimates) from a power modeling simulator, wherein the power value data (Hsiao: pg.48, table 3, power estimates) comprises at least one type of power value selected from MIN, TYP, MAX (HSIAO: PG.46, SECTION 4 "GA FRAMEWORK FOR POWER ESTIMATION", LINE 6), and TypMAX (Hsiao: pg.46, section 4 "GA Framework for Power Estimation", line 6); generating a set of summary data from the power value data; analyzing the summary data according to a design requirement; and reporting a result of the analyzing step; wherein the summary data includes at least one type of data selected from single-cycle summary data configured to report a peak single cycle derivative (although this limitation is not defined in the disclosure, the Office interprets "single cycle derivative" as "find power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) power value, wherein a derivative value (although this limitation is not defined in the disclosure, the Office interprets "single cycle derivative" as "find power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) is a difference between two particular associated power values in the simulation, multi-cycle (pg.49, table 4, "N- cycle") summary data configured to report a peak average power value fiver multiple cycles, and multi-cycle

derivative data configured to report a peak derivative ("finding power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) power value over multiple cycles.

Claim 11. The method of claim 10, further comprising: calculating a value of the multi-cycle derivative (find power under *different or derived* delay assumptions" , pg. 46, right column, 2nd paragraph, last two sentences; pg.49, table 4, "N- cycle").

Claim 14. The method of claim 1, further comprising: applying an automatic detection scheme to detect an end for an multi-cycle derivative MCD if an multi-cycle derivative (find power under *different or derived* delay assumptions" , pg. 46, right column, 2nd paragraph, last two sentences; pg.49, table 4, "N- cycle") is included in the summary, wherein the automatic detection scheme is one selected from single-cycle (pg.49, table 4, "N- cycle") derivative (SCD)/MCD, DROP/TOP, and a combination thereof.

Claim 15. The method; of claim 5, further comprising: applying an automatic detection scheme to detect an end for an multi-cycle derivative (find power under *different or derived* delay assumptions" , pg. 46, right column, 2nd paragraph, last two sentences; pg.49, table 4, "N- cycle"), if an multi-cycle derivative (find power under *different or derived* delay assumptions" , pg. 46, right column, 2nd paragraph, last two sentences; pg.49, table 4, "N- cycle") is included in the summary, wherein the automatic detection scheme is one selected from single-cycle derivative (although this limitation is not

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defined in the disclosure, the Office interprets "single cycle derivative" as "find power under *different or derived* delay assumptions", Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) (SCD)/MCD, DROP/TOP, and a combination thereof.

Claim 16. The method of claim 10, further comprising: applying an automatic detection scheme to detect an end for an multi-cycle derivative, derivative ("finding power under *different or derived* delay assumptions", Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) if an multi-cycle derivative ("finding power under *different or derived* delay assumptions", Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) is included in the summary, wherein the automatic detection scheme is one selected from single-cycle derivative (SCD)/MCD, DROR/TOP, and a combination thereof.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsiao in view of Bogliolo et al., ("Gate-Level Power and Current Simulation of CMOS Integrated Circuits" (1997)) (hereafter Bogliolo).

Hsiao teaches

- Multi-cycle derivatives (table 6)
- start value (any value, table 6) and an end value of associated power data
- calculating a single-cycle derivative (although this limitation is not defined in the disclosure, the Office interprets "single cycle derivative" as "finding power under *different or derived* delay assumptions" , Hsiao, pg. 46, right column, 2nd paragraph, last two sentences) calculating a difference from the highest value (maximum value, pg.46, 4th paragraph, line 5) to a start value of the power data in the current multi-cycle derivative (table 6)

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- generating an end value (the last value chosen by the user, tables 2-6)

but Hsiao fails to teach ratios and thresholds

Bogliolo teaches ratios and thresholds

- setting a threshold (Bogliolo: the suggestion of threshold: pg.480, left column, 2nd paragraph)
- the ratio becomes larger than the threshold value (suggestion of establishing a threshold, pg. 480, left column, 2nd paragraph)
- ratio (Bogliolo: the suggestion of the size of the ratio between input and outputs: pg.475, right column, 3rd paragraph) becomes larger than the threshold (Bogliolo: the suggestion of threshold: pg.480, left column, 2nd paragraph) value.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to use thresholds and ratios since Bogliolo teaches a method to provide consistent estimates of supply energies, current profiles and propagation delays (Bogliolo: pg. 487, left column, 3rd paragraph, lines 2-3).

Section II: Response to Arguments

Amendments to the Specification

11. Applicants are thanked for addressing this issue; however, the original disclosure failed to denote, either directly or inherently, the term SCD. The objection stands.

Claim Amendments

12. Applicants are thanked for addressing this issue; however, the Office was unable to locate applicants' amendment i.e., definition of derivative power value, (applicants' response, page 7, last paragraph) in paragraph 0017, as stated.

112 1st

13. Applicants are thanked for responding to this issue; however, applicants' amendment is silent within the original disclosure. Thus, as stated above, the rejection stands.

102/103

14. Applicants are thanked for responding to this issue but are non-persuasive in view of the prior art. The rejections as set forth above stand.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens.

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Anthony Knight 571-272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

A handwritten signature in black ink, appearing to read 'Anthony Knight', is positioned above the printed name.

Anthony Knight
Supervisory Patent Examiner
Technology Center 2100